



SEQUENCE LISTING

<110> Murphy, Dennis
Reid, John

<120> ALPHA GALACTOSIDASES AND METHODS FOR
MAKING AND USING THEM (Amended)

<130> 09010-004005

<140> US 09/886,400

<141> 2001-06-20

<150> US 09/407,806

<151> 1999-09-28

<150> US 08/613,220

<151> 1996-03-08

<160> 4

<170> FastSEQ for Windows Version 4.0

<210> 1

<211> 52

<212> DNA

<213> Artificial Sequence

<220>

<223> synthetically generated oligonucleotide

<400> 1

ccgagaattc attaaagagg agaaattaac tatgagagcg ctcgtctttc ac

52

<210> 2

<211> 31

<212> DNA

<213> Artificial Sequence

<220>

<223> synthetically generated oligonucleotide

<400> 2

cggaagatct aggttcccca ttttcacccc t

31

<210> 3

<211> 1095

<212> DNA

<213> Thermococcus alcaliphilus

<400> 3

ttgagagcgc tcgtctttca cggcaacctc cagtatgccg aaatcccaaa gagcgaaatc

60

ccaaagggtca tagagaaggc atacatccca gtcatcgaga cactgattaa agaagaaatt

120

ccttttgggc tcaacataac gggctatacc ttaaagtcc tcccgaagga tattatagac

180

ctcgttaaaag ggggcatcgc gaggacctg atagagataa tcggaacgag ctacacgcac

240

gcaatactcc ccctcctgcc gcttagcaga gtagaagcac aagttcagag agatagggaa

300

E4

gttaaggaag	agctcttcga	ggttttctcca	aagggattct	ggctgccaga	gctcgcctat	360
gacccgataa	tccctgccat	actgaaggac	aacggttatg	agtatctatt	cgccgacggg	420
gaggcgatgc	ttttctcagc	tcattctcaac	tcggcgataa	agccaattaa	accgctctat	480
ccacacctta	taaaggccca	aagggaagaa	cgcttttaggt	acatcagcta	tctccttggt	540
ctcagggagc	ttaggaaggc	gataaagctc	gtttttgaag	gtaaggtaac	gctaaaggca	600
gtcaaagaca	tcgaagccgt	acccgtttgg	gtggccgtga	acacggctgt	aatgctcggc	660
atcggaaggc	ttcctcttat	gaatcctaag	aaagtggcga	gctggataga	ggacaaggac	720
aacattcttc	tatacggcac	cgatatagag	ttcattggct	atagggacat	tgcaggctac	780
agaatgagtg	ttgagggatt	attagagggt	atagacgagc	tcaactcgga	actgtgcctt	840
ccctcagagc	tgaagcacag	tggaagggag	ctctacttac	ggacttcgag	ttgggcacca	900
gataagagct	tgaggatatg	gagagaggac	gaagggaacg	caagacttaa	tatgctgtcc	960
tacaatatga	ggggcgaaact	cgccttttta	gccgagaaca	gcgatgcaag	gggatgggag	1020
cccctccctg	agaggaggct	ggatgccttc	cgggcgatat	ataacgattg	gaggggtgaa	1080
aatggggaac	cttag					1095

<210> 4

<211> 364

<212> PRT

<213> Thermococcus alcaliphilus

<400> 4

E4

Leu	Arg	Ala	Leu	Val	Phe	His	Gly	Asn	Leu	Gln	Tyr	Ala	Glu	Ile	Pro
1				5				10						15	
Lys	Ser	Glu	Ile	Pro	Lys	Val	Ile	Glu	Lys	Ala	Tyr	Ile	Pro	Val	Ile
			20					25					30		
Glu	Thr	Leu	Ile	Lys	Glu	Glu	Ile	Pro	Phe	Gly	Leu	Asn	Ile	Thr	Gly
		35					40					45			
Tyr	Thr	Leu	Lys	Phe	Leu	Pro	Lys	Asp	Ile	Ile	Asp	Leu	Val	Lys	Gly
	50					55					60				
Gly	Ile	Ala	Ser	Asp	Leu	Ile	Glu	Ile	Ile	Gly	Thr	Ser	Tyr	Thr	His
65					70					75				80	
Ala	Ile	Leu	Pro	Leu	Leu	Pro	Leu	Ser	Arg	Val	Glu	Ala	Gln	Val	Gln
			85					90						95	
Arg	Asp	Arg	Glu	Val	Lys	Glu	Glu	Leu	Phe	Glu	Val	Ser	Pro	Lys	Gly
		100						105					110		
Phe	Trp	Leu	Pro	Glu	Leu	Ala	Tyr	Asp	Pro	Ile	Ile	Pro	Ala	Ile	Leu
		115					120						125		
Lys	Asp	Asn	Gly	Tyr	Glu	Tyr	Leu	Phe	Ala	Asp	Gly	Glu	Ala	Met	Leu
	130					135				140					
Phe	Ser	Ala	His	Leu	Asn	Ser	Ala	Ile	Lys	Pro	Ile	Lys	Pro	Leu	Tyr
145					150					155				160	
Pro	His	Leu	Ile	Lys	Ala	Gln	Arg	Glu	Lys	Arg	Phe	Arg	Tyr	Ile	Ser
			165					170						175	
Tyr	Leu	Leu	Gly	Leu	Arg	Glu	Leu	Arg	Lys	Ala	Ile	Lys	Leu	Val	Phe
			180					185					190		
Glu	Gly	Lys	Val	Thr	Leu	Lys	Ala	Val	Lys	Asp	Ile	Glu	Ala	Val	Pro
		195					200						205		
Val	Trp	Val	Ala	Val	Asn	Thr	Ala	Val	Met	Leu	Gly	Ile	Gly	Arg	Leu
	210					215					220				
Pro	Leu	Met	Asn	Pro	Lys	Lys	Val	Ala	Ser	Trp	Ile	Glu	Asp	Lys	Asp
225					230					235				240	
Asn	Ile	Leu	Leu	Tyr	Gly	Thr	Asp	Ile	Glu	Phe	Ile	Gly	Tyr	Arg	Asp
			245						250					255	
Ile	Ala	Gly	Tyr	Arg	Met	Ser	Val	Glu	Gly	Leu	Leu	Glu	Val	Ile	Asp
		260						265					270		
Glu	Leu	Asn	Ser	Glu	Leu	Cys	Leu	Pro	Ser	Glu	Leu	Lys	His	Ser	Gly
		275					280						285		

Arg Glu Leu Tyr Leu Arg Thr Ser Ser Trp Ala Pro Asp Lys Ser Leu
290 295 300
Arg Ile Trp Arg Glu Asp Glu Gly Asn Ala Arg Leu Asn Met Leu Ser
305 310 315 320
Tyr Asn Met Arg Gly Glu Leu Ala Phe Leu Ala Glu Asn Ser Asp Ala
325 330 335
Arg Gly Trp Glu Pro Leu Pro Glu Arg Arg Leu Asp Ala Phe Arg Ala
340 345 350
Ile Tyr Asn Asp Trp Arg Gly Glu Asn Gly Glu Pro
355 360

E4